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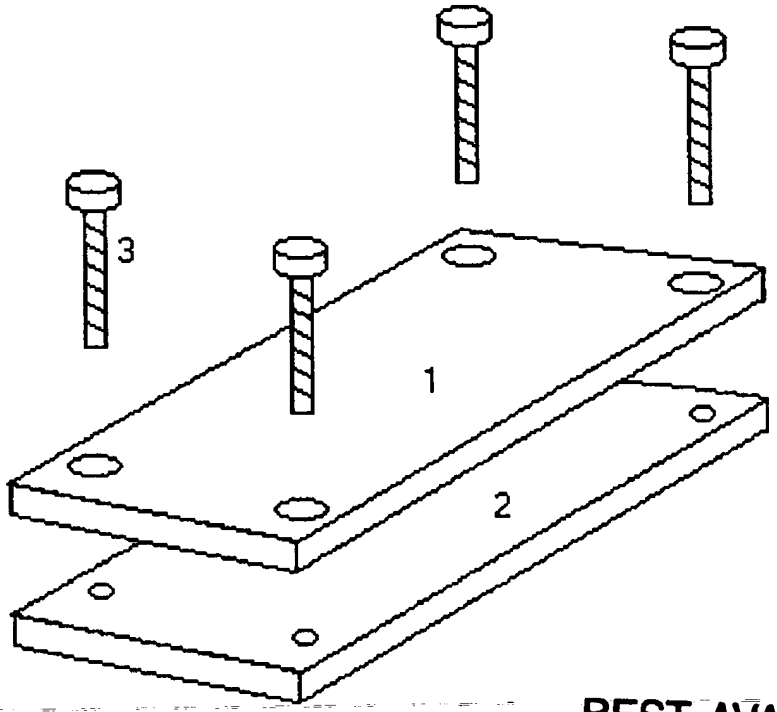
(54) Titre : MASSE POUR ENTRAINEMENT MUSCULAIRE
(54) Title: MUSCLE TRAINING WEIGHT



(57) Abrégé/Abstract:
A sports or work muscle weight training device comprised of two depending plates and fastening means. The training device can be used with any sports or work implement or worn article that it can be fastened to. Examples include racquets, hockey sticks, lacrosse sticks, oars, paddles, shoes, skates, boots, etc. The two plates frictionally engage an area of the implement, while suitable means of fasteners (cap screws, bolts, cords, or spring mechanisms for example) hold the two plates together from around the protruding edges of the two plates. The training device is best made of a metal such as steel, lead, copper, zinc, etc, though concrete, stone, glass, plastic, enclosed liquids, or a combination of these may also serve this function.

Muscle Training Weight

Abstract:

A sports or work muscle weight training device comprised of two depending plates and fastening means. The training device can be used with any sports or work implement or worn article that it can be fastened to. Examples include racquets, hockey sticks, lacrosse sticks, oars, paddles, shoes, skates, boots, etc. The two plates frictionally engage an area of the implement, while suitable means of fasteners (cap screws, bolts, cords, or spring mechanisms for example) hold the two plates together from around the protruding edges of the two plates. The training device is best made of a metal such as steel, lead, copper, zinc, etc, though concrete, stone, glass, plastic, enclosed liquids, or a combination of these may also serve this function.

Description

1. Field of the Invention

The present invention relates to training weights used with sports, exercise, or work implements or accessories. In particular, the invention is a detachable weight that is used attached to such an implement for muscle training.

2. Discussion of Background

Training weights used with sports equipment are known in a number of different sports. The ring-shaped baseball bat weight, leaded racquet tape, and the medicine ball are examples. Weight training develops muscles used in the general motion of the body for that activity. Consequently the muscles become conditioned to respond in the same way when called upon during the target activity. This type of training or conditioning seeks to develop "muscle memory". The objective of this type of weight training is not to replace conventional 'gym' training, but to be used together with other training methods to 'fine tune' the muscles more accurately for the target sport or activity. The complementary 'during activity' training of smaller muscle groups, not developed in the same way as the larger muscles during a 'gym' workout, leads to greater speed and hand-eye coordination. Training with weights of this sort is also a good 'warm up' prior to activity as it mobilizes blood to the muscles.

To date, few weight-training methods have been successfully established in the market for many implement-oriented sports. Examples include golf, tennis, hockey, curling, badminton, racquetball, squash, and even table tennis. Similarly, several forms of work could benefit from the use of a weight for muscle training. Examples include hammering, sawing, sweeping, and shovelling. Though several ideas have been put forth for some sports, few have established themselves in the market. This is largely due to inadequate engineering of the weight to allow: safe handling, effective development of muscle memory, and the manufacture of such a weight cost effectively to yield a marketable product. Further, the need for a weight of this design in many activities is limited by the fact that many activities can be trained for with the use of conventional exercises as one would find in a gym setting. The present invention recognizes a need and can develop a market.

Many sports involve striking a projectile with an implement. In most of these sports, the projectile's velocity is largely proportional to swing speed at the point of contact. Thus it is beneficial for the muscles that develop swing speed to undergo weight training. Even a small weight properly placed at a length from the wielder can require significant force for the muscles that move it. For instance, in racquet sports the weight is designed to clamp to the racquet at the furthest distance from the hand. Similarly in hockey, the weight is designed to clamp around the shaft at the point where the wooden blade is inserted into the metal shaft (or approximately the same position on a completely wooden stick). This use of leverage allows for the minimum size and mass for the design of the weight that would adequately condition the muscle. Consider some of the following examples:

In baseball, US patent 3974559 discloses the baseball 'doughnut' which fits around the baseball bat and easily drops off the bat when needed. This successful invention has become wide spread in its use and retail.

In racquet sports, there are several weights described in the literature to date:

US Patent 5964671 of Edwards discloses a variable weight dually housed racquet weight that attaches to the strings of a racquet. This adequately warms up and conditions the muscles but has the weaknesses of; not being able to actually make contact with the ball while warming up, contributing to wear on the strings, and requiring some assembly.

US Patent 4000893 of Evans discloses a variable weight pocketed wrap that wraps around a portion of the racquet and is suitably secured, with something like Velcro. This weight doesn't seem to have been successful in the marketplace likely because of the bulkiness of such a wrap, coupled with the likelihood of the wrap to become detached during contact or with the 'wear' on the Velcro itself. The weight would also have to be placed on the handle requiring a heavier weight be used in order to condition the muscles. This would increase the likelihood of the weight loosening and/or falling off as well as the force required from the Velcro to keep it attached.

In hockey, there are also several weights described in the literature:

US Patent 4364560 of Sasko discloses a U-shaped plastic weight that frictionally engages the blade of the stick and is secured by a tether. The tether fastens to the shaft of the stick securing the weight from flying off the end of the blade during the swing. Similarly, US Patent 2912245 of Gardner describes a rubber sleeve designed to conform to the blade. Though these designs would condition the muscles, the feel and drag of the ball/puck would be quite different while stick handling and alter the shot. The use of rubber and plastic may also be unsuitable as neither adds sufficient weight to strengthen the muscles in the short term. The problem with this weight is that it isn't likely to condition the muscle if made of material that conforms to more than one blade. Further, the tether would not adequately secure the weight after impact or during game play as the swinging motion is not the only motion used in hockey. Manufacture of such a weight would also appear to be a source of problems driving the price out of the market.

US Patent 4364560 of Gemmel describes a U-shaped weight that can be attached to the shaft or handle of the stick and secured by clamp screws. A cover wraps around the exposed screws, protecting the player from injury. The problem with this weight is that hockey sticks are not uniform in dimensions, and thus the weight may rattle or loosen with use. Where dimensions are suitable, this weight performs the task well. This weight has little or no application to goalie sticks and cannot be adapted to most other sports equipment, as can the present invention.

CA Patent 936553 describes a puck-shaped weight that can be screwed into the shaft or handle of the stick. The problem with this weight is that it requires that a hole be put in the stick to secure it, thus weakening the stick, and increasing the chance of breakage, damage, or injury.

US Patent 3834697 describes a completely surrounding weight that hinges and closes around the shaft of the stick. Again, this weight is among the better for conditioning but suffers slightly from non-uniformity between shafts, the weakness inherent in the hinge and clasp mechanism, and the considerable expense of creating such a weight pushing it out of the market place.

removed by hand. Plate 2 contains 1 or more holes (4 shown) threaded or otherwise designed to accommodate the fasteners penetrating plate 1. Note that the drawing is not to scale and may involve any number of plates depending on the application intended. These plates may also take the form of inserts fitting into another plate or frictionally held via a projection or fastener to one of the clamping plates. The fastener may also take the form of flexible wire, rope, or some form of strapping to thread through the hole(s) allowing wrapping of the weight around other sports accessories like skates or gloves. Thus the weight may be varied in mass and fastened tightly to many different shapes to suit different implements or sports accessories. Note that in most cases, care must be taken not to over tighten the weight such as to damage the implement (e.g. carbon based tennis racquets) Consider the following example sports:

For racquet sports the dual steel plate weight clamps around the top of the frame of the racquet and is fastened from either side via cap screws. The weight may be designed to conform to the shape of the racquet and may contain a groove for the racquet frame to slot into. The weight may also be used with some form of padding to protect the racquet from over tightening and subsequent damage. It is also recommended, where practicable to have a tether attached to the racquet handle securing the racquet to the wrist in the case of the added weight causing the racquet to unexpectedly come away from the wielder's grasp.

In the sport of hockey a weight of this design is suitable for fastening to goalie sticks, regular sticks, skates and gloves. In attaching to a stick, the weight simply clamps around the stick near its base preferably at the point where the blade is inserted into the aluminium shaft or approximately the same distance from the blade on a goalie stick or one-piece stick. The same weight can be strapped to the gloves or skates via a strap threaded through the cap screw holes. The strap has bound at one end a metal pin that facilitates threading through the hole in the plate, which is designed to lay flat against the plate (or into a slot cut into the plate's hole) when tensioned from the other side.

Similar circumstances apply to sports such as lacrosse, golf, field hockey, and more where the weight is fastened using leverage of the moment arm to increase the force required by the muscles.

It will be apparent to those skilled in the art that many modifications and substitutions can be made to the preferred embodiment without departing from the spirit and scope of the present invention, which is defined by the appended claims.

Claimed:

1. A muscle training device for use with a sports or work implement, said implement having suitable area for said device to fasten to or around said implement, said device comprising a weight formed to be adapted to straddle said implement with suitable fastening means, said weight designed with variable dimensions customized to the implement, or activity to be performed, wherein said weight is designed to be removable and reattachable to said implement.

2. The device as recited in claim 1, wherein said weight is adapted to frictionally engage said component or area of said implement.

3. The device as recited in claim 2, wherein said weight is made of any solid material, or liquid material with solid encasement.

4. The device as recited in claim 3, wherein said weight weighs approximately between one gram and ten kilograms.

5. The device as recited in claim 4, wherein said weight further comprises multiple spaced apart plates, one or more bridge components joining said plates, or said plates are adapted to engage or surround said implement.

6. The device as recited in claim 5, wherein said plates have holes formed therein and said device further comprises one or more fasteners (e.g. bolts, cap screws, screws, pins), said fasteners tapped (screw threaded) through said holes (which are countersunk) in said plates, or secured by other means.

7. The device as recited in claim 6, further comprising a tether to adaptively tie said weight to said implement, said tether made of any flexible material (e.g. elastic, vinyl, string, wire, leather).

8. The device as recited in claim 7, further comprising means for adaptively securing said weight to said implement.

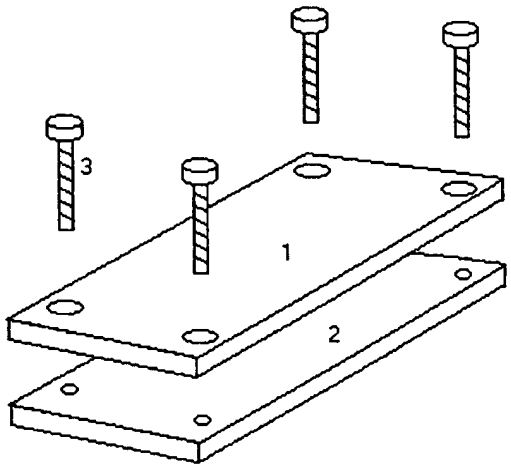
9. The device as recited in claim 8, wherein said weight is formed to conform to the surface of said implement.

10. The device as recited in claim 9, wherein said weight is coated, padded, or otherwise

protected from corrosion and damage/injury with a synthetic substance (e.g. paint, rubber, cloth).

11. The device as recited in claim 10, wherein said weight is adapted for receiving the fastening tether. For example the use of a metal pin intended to fit into a slot cut into the threaded hole to attach the tether to the weight.

Drawing 1:



The general form of the weight follows that illustrated in Drawing 1. Plate 1 typically contains 1 or more holes (4 shown) counter sunk to allow the lock washer(s) and fastener(s) (4 cap screws in this case) to penetrate without protruding and thereby minimise risk of injury. Once loosened slightly, the cap screws can be quickly and easily